

ANALYTICAL REPORT

Job Number: 580-15416-1

Job Description: Rainier Commons

For:

Clean Harbors Environmental Services Inc
19320 Des Moines Memorial Dr
Bldg D, Suite 400
Seatac, WA 98148

Attention: Shawn Estrada



Approved for release
Heather Curbow
Project Manager I
9/28/2009 3:09 PM

Heather Curbow
Project Manager I
heather.curbow@testamericainc.com
09/28/2009

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This report shall not be reproduced except in full, without prior express written approval by the laboratory. The results relate only to the item(s) tested and the sample(s) as received by the laboratory.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

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Job Narrative
580-J15416-1

Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

GC Semi VOA

Method(s) 8082:

Due to the high concentration of Aroclor 1260 and other aroclors, the matrix spike / matrix spike duplicate (MS/MSD) for batch 50379 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The surrogate (DCB) recovery for the laboratory control standard associated with extraction batch 50322 was outside recovery limits. All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported.

No other analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

METHOD SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

| Description | Lab Location | Method | Preparation Method |
|--|--------------|--------------|--------------------|
| Matrix: Solid | | | |
| Polychlorinated Biphenyls (PCBs) by Gas Chromatography | TAL TAC | SW846 8082 | |
| Ultrasonic Extraction | TAL TAC | | SW846 3550B |
| Metals (ICP) | TAL TAC | SW846 6010B | |
| Preparation, Metals | TAL TAC | | SW846 3050B |
| Percent Moisture | TAL TAC | EPA Moisture | |

Lab References:

TAL TAC = TestAmerica Tacoma

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|----------------------|-------------------------|----------------------|------------------------------|-------------------------------|
| 580-15416-1 | RC 91509 | Solid | 09/15/2009 0000 | 09/15/2009 1200 |

Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Client Sample ID: RC 91509

Lab Sample ID: 580-15416-1

Date Sampled: 09/15/2009 0000

Client Matrix: Solid

% Moisture: 0.5

Date Received: 09/15/2009 1200

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| | | | | | |
|----------------|-----------------|-----------------|-----------|------------------------|-----------|
| Method: | 8082 | Analysis Batch: | 580-50379 | Instrument ID: | TAC034 |
| Preparation: | 3550B | Prep Batch: | 580-50322 | Initial Weight/Volume: | 10.0714 g |
| Dilution: | 1.0 | | | Final Weight/Volume: | 10 mL |
| Date Analyzed: | 09/17/2009 1223 | | | Injection Volume: | 1.0 uL |
| Date Prepared: | 09/16/2009 1107 | | | Result Type: | PRIMARY |

| Surrogate | %Rec | Qualifier | Acceptance Limits |
|------------------------|------|-----------|-------------------|
| Tetrachloro-m-xylene | 95 | | 45 - 155 |
| DCB Decachlorobiphenyl | 107 | | 60 - 125 |

Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Client Sample ID: RC 91509

Lab Sample ID: 580-15416-1

Date Sampled: 09/15/2009 0000

Client Matrix: Solid

% Moisture: 0.5

Date Received: 09/15/2009 1200

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| | | | | | |
|----------------|-----------------|-----------------|-----------|------------------------|-----------|
| Method: | 8082 | Analysis Batch: | 580-50379 | Instrument ID: | TAC034 |
| Preparation: | 3550B | Prep Batch: | 580-50322 | Initial Weight/Volume: | 10.0714 g |
| Dilution: | 10 | | | Final Weight/Volume: | 10 mL |
| Date Analyzed: | 09/17/2009 1726 | | | Injection Volume: | 1.0 uL |
| Date Prepared: | 09/16/2009 1107 | | | Result Type: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | RL |
|----------|--------------------|----------------|-----------|------|
| PCB-1016 | | ND | | 0.10 |
| PCB-1221 | | ND | | 0.10 |
| PCB-1232 | | ND | | 0.10 |
| PCB-1242 | | ND | | 0.10 |
| PCB-1248 | | ND | | 0.10 |
| PCB-1254 | | ND | | 0.10 |
| PCB-1260 | | 4.7 | | 0.10 |

Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Client Sample ID: RC 91509

Lab Sample ID: 580-15416-1

Date Sampled: 09/15/2009 0000

Client Matrix: Solid

% Moisture: 0.5

Date Received: 09/15/2009 1200

6010B Metals (ICP)

Method: 6010B

Analysis Batch: 580-50845

Instrument ID: SEA027

Preparation: 3050B

Prep Batch: 580-50784

Lab File ID: N/A

Dilution: 1.0

Initial Weight/Volume: 1.0758 g

Date Analyzed: 09/24/2009 1346

Final Weight/Volume: 50 mL

Date Prepared: 09/23/2009 1753

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | RL |
|---------|--------------------|----------------|-----------|-----|
| Lead | | 33 | | 1.4 |

Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

General Chemistry

Client Sample ID: RC 91509

Lab Sample ID: 580-15416-1

Client Matrix: Solid

Date Sampled: 09/15/2009 0000

Date Received: 09/15/2009 1200

| Analyte | Result | Qual | Units | RL | Dil | Method |
|------------------|---------------------------|--------------------------------|-------|------|-----|--------------------|
| Percent Solids | 100 | | % | 0.10 | 1.0 | Moisture |
| | Analysis Batch: 580-50363 | Date Analyzed: 09/16/2009 1745 | | | | DryWt Corrected: N |
| Percent Moisture | 0.49 | | % | 0.10 | 1.0 | Moisture |
| | Analysis Batch: 580-50363 | Date Analyzed: 09/16/2009 1745 | | | | DryWt Corrected: N |

Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Method Blank - Batch: 580-50322

Method: 8082

Preparation: 3550B

Lab Sample ID: MB 580-50322/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/17/2009 1153
Date Prepared: 09/16/2009 1107

Analysis Batch: 580-50379
Prep Batch: 580-50322
Units: mg/Kg

Instrument ID: TAC034
Lab File ID: PCB23780.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

| Analyte | Result | Qual | RL |
|----------|--------|------|-------|
| PCB-1016 | ND | | 0.010 |
| PCB-1221 | ND | | 0.010 |
| PCB-1232 | ND | | 0.010 |
| PCB-1242 | ND | | 0.010 |
| PCB-1248 | ND | | 0.010 |
| PCB-1254 | ND | | 0.010 |
| PCB-1260 | ND | | 0.010 |

| Surrogate | % Rec | Acceptance Limits |
|------------------------|-------|-------------------|
| Tetrachloro-m-xylene | 98 | 45 - 155 |
| DCB Decachlorobiphenyl | 117 | 60 - 125 |

Lab Control Sample - Batch: 580-50322

Method: 8082

Preparation: 3550B

Lab Sample ID: LCS 580-50322/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/17/2009 1208
Date Prepared: 09/16/2009 1107

Analysis Batch: 580-50379
Prep Batch: 580-50322
Units: mg/Kg

Instrument ID: TAC034
Lab File ID: PCB23781.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|----------|--------------|--------|--------|----------|------|
| PCB-1016 | 0.100 | 0.0994 | 99 | 40 - 140 | |
| PCB-1260 | 0.100 | 0.120 | 120 | 60 - 130 | |

| Surrogate | % Rec | Acceptance Limits |
|------------------------|-------|-------------------|
| Tetrachloro-m-xylene | 102 | 45 - 155 |
| DCB Decachlorobiphenyl | 127 | 60 - 125 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 580-50322

Method: 8082
Preparation: 3550B

MS Lab Sample ID: 580-15416-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/17/2009 1239
Date Prepared: 09/16/2009 1107

Analysis Batch: 580-50379
Prep Batch: 580-50322

Instrument ID: TAC034
Lab File ID: PCB23783.D
Initial Weight/Volume: 10.4406 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

MSD Lab Sample ID: 580-15416-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/17/2009 1255
Date Prepared: 09/16/2009 1107

Analysis Batch: 580-50379
Prep Batch: 580-50322

Instrument ID: TAC034
Lab File ID: PCB23784.D
Initial Weight/Volume: 10.2651 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

| Analyte | % Rec. | | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
|------------------------|----------|-------|-----------|-------------------|-----------|---------|----------|
| | MS | MSD | | | | | |
| PCB-1016 | 590 | 429 | 40 - 140 | 30 | 20 | F | F |
| PCB-1260 | -1560 | -2170 | 60 - 130 | 27 | 20 | 4 | 4 F |
| Surrogate | MS % Rec | | MSD % Rec | Acceptance Limits | | | |
| Tetrachloro-m-xylene | 90 | | 87 | 45 - 155 | | | |
| DCB Decachlorobiphenyl | 100 | | 96 | 60 - 125 | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Method Blank - Batch: 580-50784

Method: 6010B
Preparation: 3050B

Lab Sample ID: MB 580-50784/16-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/24/2009 1222
Date Prepared: 09/23/2009 1753

Analysis Batch: 580-50845
Prep Batch: 580-50784
Units: mg/Kg

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

| Analyte | Result | Qual | RL |
|----------|--------|------|------|
| Arsenic | ND | | 3.0 |
| Barium | ND | | 0.50 |
| Cadmium | ND | | 0.50 |
| Chromium | ND | | 1.3 |
| Lead | ND | | 1.5 |
| Selenium | ND | | 5.0 |
| Silver | ND | | 1.0 |

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 580-50784

Method: 6010B
Preparation: 3050B

LCS Lab Sample ID: LCS 580-50784/17-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/24/2009 1226
Date Prepared: 09/23/2009 1753

Analysis Batch: 580-50845
Prep Batch: 580-50784
Units: mg/Kg

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-50784/18-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/24/2009 1230
Date Prepared: 09/23/2009 1753

Analysis Batch: 580-50845
Prep Batch: 580-50784
Units: mg/Kg

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

| Analyte | % Rec. | | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
|----------|--------|------|----------|-----|-----------|----------|-----------|
| | LCS | LCSD | | | | | |
| Arsenic | 91 | 93 | 80 - 120 | 1 | 35 | | |
| Barium | 99 | 100 | 80 - 120 | 2 | 35 | | |
| Cadmium | 93 | 95 | 80 - 120 | 1 | 35 | | |
| Chromium | 98 | 100 | 80 - 120 | 2 | 35 | | |
| Lead | 95 | 96 | 80 - 120 | 1 | 35 | | |
| Selenium | 87 | 88 | 80 - 120 | 1 | 35 | | |
| Silver | 93 | 95 | 80 - 120 | 2 | 35 | | |

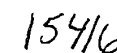
Calculations are performed before rounding to avoid round-off errors in calculated results.

DATA REPORTING QUALIFIERS

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

| Lab Section | Qualifier | Description |
|-------------|-----------|---|
| GC Semi VOA | | |
| | F | MS or MSD exceeds the control limits |
| | 4 | MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable. |
| | F | RPD of the MS and MSD exceeds the control limits |
| | X | Surrogate exceeds the control limits |

☐ Other

OFFICE COPY

Login Sample Receipt Check List

Client: Clean Harbors Environmental Services Inc

Job Number: 580-15416-1

Login Number: 15416
Creator: Blankinship, Tom
List Number: 1

List Source: TestAmerica Tacoma

| Question | T / F / NA | Comment |
|--|------------|----------|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | False | hand Del |
| Cooler Temperature is acceptable. | False | ambient |
| Cooler Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| ample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | True | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Is the Field Sampler's name present on COC? | False | noname |
| Sample Preservation Verified | True | |